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**B.Tech - CSE**  
**Term-End Examination**  
**June, 2013**

**BICSE-003 : NEURAL NETWORK**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt **any seven** questions. Assume the missing data, if **any**.*

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1. How is a neural network structured, i.e. how are different neurons combined or connected to obtain the desired behaviour ? 10
2. Describe the working of an artificial neuron and compare with biological neuron. 10
3. Describe the feed - forward neural network with the help of an example. 10
4. What are adaptive multi-layer networks ? Also discuss about the Tiling algorithm in brief. 10
5. Write short notes on the followings : 5x2=10
  - (a) The recurrent networks
  - (b) Regularization

6. What are the major differences between supervised and unsupervised learning ? Also discuss the areas of application, where one is better than other. 10
7. Consider the maxnet algorithm. What would happen if the mutual inhibition magnitude exceeds  $\frac{1}{(\text{number of nodes})}$  ? 10
8. (a) What is Fuzzy set theory ? Compare with classical set theory. 5x2=10  
(b) How Fuzzy theory is different from probability theory ? Explain with an example.
9. (a) Describe the major components of an Adaptive Neuro-Fuzzy Inference Systems (ANFIS). 5x2=10  
(b) How Fuzzy logic is useful in neural networking ?
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